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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,215	06/08/2006	Robert Greiner	4001-1220	3850

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YOUNG & THOMPSON  
209 Madison Street  
Suite 500  
Alexandria, VA 22314

EXAMINER
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KHATRI, PRASHANT J

ART UNIT	PAPER NUMBER
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1783

NOTIFICATION DATE	DELIVERY MODE
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04/19/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,215	<b>Applicant(s)</b> GREINER ET AL.	
	<b>Examiner</b> PRASHANT J. KHATRI	<b>Art Unit</b> 1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9,12,14,16,17,19,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9,12,14,16,17,19,21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

In response to Amendments/Arguments filed 1/7/2010. Claims 9, 12, 14, 16-17, 19, and 21-22 are pending. Claims 9, 14, 16-17, and 19 were amended. Claim 22 was added as new. Claims 11, 13, 18, and 20 were cancelled.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 recites the size of the particles as being less than 100 microns. Examiner notes that independent claim 9, upon which 14 depends, presently recites the use of copper fibers and no particles. As such, it is not clear whether the particles are still present.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 9, 12, 16-17, 19, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (**US 20030153223**) in view of Nakazawa (**JP 09-241420**).

5. Matsumoto et al. disclose a plastic electrical conductive material. Concerning claims 9, 16, and 19, it is noted that the electrical conductive material is comprised of a certain amount of conductive material and thermoplastic matrix material wherein the conductive material forms a three-dimensional metal net structure (**para. 0056-0060**).

The conductive material is comprised of fiber or particulate filler such as copper as well as a low melting point alloy wherein the rate of mixture of the filler and matrix resin is controlled to reduce volume resistance (**para. 0060-0062**). The amount of total filler is found to be from 50 wt% to 95 wt% as compared to the total composition (**para. 0063; Embodiment 1**). Regarding the total filler, it is noted that a combination of a low melting point metal (i.e. tin-based materials) and a high melting point metal (i.e. copper materials) can be included together within the filler composition and as such, meets the instant limitations. The resultant composition is then molded into a desired shape such as a case body and the like and has a volume resistance of less than  $10^{-4}$   $\Omega$ -cm, which would meet the limitations of claims 12, 17, and 22 (**para. 0077; para. 0055+**).

However, Matsumoto et al. are silent to the components of the presently claimed low melting point metal compound, amount of copper fiber, and characteristics of said fiber.

6. Nakazawa discloses a composition comprising a thermoplastic resin, an electroconductive fiber such as a copper fiber at a weight from 1-50 wt% and a metal compound alloy consisting of tin, bismuth, and zinc wherein such a compound alloy has

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a melting temperature of about 117°C to about 280°C (**abstract; para. 0016-0017**).

The use of copper fibers in combination with the metal compound alloy has longer lasting conductivity and is environmentally friendly (**para. 0008**). Given that Matsumoto et al. disclose controlling the rate of mixture between the filler and matrix material affects the volume resistance and Nakazawa discloses the combination of the low melting point metal in combination with copper fibers has longer lasting conductivity as well as being environmentally friendly, it would have been obvious to one of ordinary skill in the art to use the low melting point compound of Nakazawa as the low melting point alloy of Matsumoto and to adjust the resin content to the desired filler.

7. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Matsumoto et al. disclose a plastic electrical conductive material. However, Matsumoto et al. are silent to the components of the presently claimed low melting point metal compound, amount of copper fiber, and characteristics of said fiber. Nakazawa discloses a composition comprising a thermoplastic resin, an electroconductive fiber such as a copper fiber at a weight from 1-50 wt% and a metal compound alloy consisting of tin, bismuth, and zinc wherein such a compound alloy has a melting temperature of about 117°C to about 280°C. Given that Matsumoto et al. disclose controlling the rate of mixture between the filler and matrix material affects the volume resistance and Nakazawa discloses the combination of the low melting point metal in combination with copper fibers has longer lasting conductivity as well as being environmentally friendly, it would have been obvious to one of ordinary skill in the art to use the low melting point compound of

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Nakazawa as the low melting point alloy of Matsumoto and to adjust the resin content to the desired filler in order to obtain the desired conductivity and resistivity profiles.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (**US 20030153223**) in view of Nakazawa (**JP 09-241420**) as applied to claim 9 above, and further in view of Kosuga et al. (**US 4960642**).

9. Matsumoto and Nakazawa disclose the above; however, prior art is silent to the presently claimed dimensions of the fibers.

10. Kosuga et al. disclose conductive fibers dispersed within a thermoplastic resin to form pellets in order to form various bodies. Concerning the dimensions and composition of the conductive fiber, it is noted that the fibers are comprised of copper or stainless steel and the like (**col. 2, lines 25+**) and have a thickness between 4 to 100 microns and a length from about 3 to 10 mm in length (**cols. 3-4, lines 61+**). The thickness is as such that if the thickness is less than 4 microns, mechanical properties are very low and thus no shield effect and if they are 100 microns, there is no effective conductive path (**cols. 3-4, lines 61+**). Regarding the length of the fibers, it is noted that if the length of the fibers are less than 3 mm, no practical EM shielding is obtained due to an increase in resistance and greater than 10 mm; the resultant product has fiber balls (**col. 4, lines 12+**). Given that Matsumoto and Nakazawa disclose the use copper fibers and Kosuga et al. disclose the sizes of the conductive fibers needed for optimal shielding and conductivity, it would have been obvious to one of ordinary skill in the art to use the fibers of Kosuga in an amount as disclosed by Nakazawa within the

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composition of Matsumoto in combination with the low melting point alloy of Kosuga to yield the network structure as shown by Matsumoto and provide longer lasting conductivity.

11. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Matsumoto et al. disclose a plastic electrical conductive material. However, Matsumoto et al. are silent to the components of the presently claimed low melting point metal compound, amount of copper fiber, and characteristics of said fiber. Nakazawa discloses a composition comprising a thermoplastic resin, an electroconductive fiber such as a copper fiber at a weight from 1-50 wt% and a metal compound alloy consisting of tin, bismuth, and zinc wherein such a compound alloy has a melting temperature of about 117°C to about 280°C. Kosuga et al. disclose conductive fibers dispersed within a thermoplastic resin to form pellets in order to form various bodies. Concerning the dimensions and composition of the conductive fiber, it is noted that the fibers are comprised of copper or stainless steel and the like and have a thickness between 4 to 100 microns and a length from about 3 to 10 mm in length. Given that Matsumoto and Nakazawa disclose the use copper fibers and Kosuga et al. disclose the sizes of the conductive fibers needed for optimal shielding and conductivity, it would have been obvious to one of ordinary skill in the art to use the fibers of Kosuga in an amount as disclosed by Nakazawa within the composition of Matsumoto in combination with the low melting point alloy of Kosuga to yield the network structure as shown by Matsumoto and provide longer lasting conductivity.

***Response to Arguments***

12. Applicant's arguments, see p. 7, filed 1/7/2010, with respect to the objection of claims 13 and 19 have been fully considered and are persuasive. The objection of claim 13 has been withdrawn. Examiner acknowledges cancellation of claim 13 and amendment of claim 19 to overcome the previous objection.

13. Applicant's arguments, see p. 7, filed 1/7/2010, with respect to the 35 USC 112, 2<sup>nd</sup> paragraph rejection of claim 17 have been fully considered and are persuasive. The rejection of the above claim has been withdrawn.

14. Applicant's arguments, see pp. 7-8, filed 1/7/2010, with respect to the 35 USC 102(b) rejection of claims 9, 12-13, 16, and 19-21 under Nakazawa et al. have been fully considered and are persuasive. The rejection of claims 9, 12-13, 16, and 19-21 has been withdrawn. However, Nakazawa is still considered to be viable as a secondary reference teaching the use of a low melting point metal compound.

15. Applicant's arguments, see p. 9, filed 1/7/2010, with respect to the 35 USC 102(b) rejection of claims 9, 11-14, 16, and 18-21 under Nakagawa et al. have been fully considered and are persuasive. The rejection of the above claims has been withdrawn.

16. Applicant's arguments, see pp. 9-10, filed 1/7/2010, with respect to the 35 USC 102(b) rejection of claims 19 and 21 under Katsumata et al. have been fully considered and are persuasive. The rejection of the above claims has been withdrawn.



***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRASHANT J. KHATRI whose telephone number is (571)270-3470. The examiner can normally be reached on M-F 8:00 A.M.-5:00 P.M. (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patricia L. Nordmeyer/  
Primary Examiner, Art Unit 1783

PRASHANT J KHATRI  
Examiner  
Art Unit 1783